ABSTRACT

The invention relates to a new method for developing a series of shoe shapes starting from a base shoe shape provided in a basic footwear size. The method comprises the following steps:

- measuring the spatial coordinates (x_B, y_B, z_B) of points on the base shoe shape (2) of basic footwear size using gauges (15) associated with a first computer means (10) on which CAD programs are run;

- obtaining, from the spatial coordinates (x_B, y_B, z_B) of points on the base shoe shape (2) of basic footwear size, spatial coordinates (x_n, y_n, z_n) of points on at least another shoe shape in the series, by using predetermined calculation formulae entered to said computer means;

- feeding an NC tool machine with said spatial coordinates (x_n, y_n, z_n) of points on at least another shoe shape in the series for the manufacturing thereof;

- using the information contained in the memory, physically installed in each shoe shape or accessible by means of its code, to design the footwear component parts and properly assembling them at the production stage.

(Fig. 1)

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
30 October 2003 (30.10.2003)

PCT

(10) International Publication Number
WO 03/088778 A3

(51) International Patent Classification[7]: A43D 1/04, G05B 19/4097, A43D 3/02

(21) International Application Number: PCT/EP03/04115

(22) International Filing Date: 22 April 2003 (22.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
02425246.2 19 April 2002 (19.04.2002) EP

(71) Applicant *(for all designated States except US)*: **CISCAL S.P.A.** [IT/IT]; Via della Meccanica, 29, I-37139 Verona (IT).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **CREMASCHI, Armido** [IT/IT]; Via Brodolini, 2, I-25028 Verolanuova (IT). **MERIGO, Flavio** [IT/IT]; Via Villa Arrighi, 1, I-37030 Mizzole (IT).

(74) Agents: **BOTTI, Mario** et al.; Botti & Ferrari S.r.l., Via Locatelli, 5, I-20124 Milano (IT).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
24 December 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR GRADING A SERIES OF SHOE LASTS DISTRIBUTED ON A SERIES OF SIZES STARTING FROM A BASE LAST AND SHOE LAST SO OBTAINED

(57) Abstract: The invention relates to a new method for developing a series of shoe lasts starting from a base shoe last provided in a basic footwear size. The method comprises the following steps: - measuring the spatial coordinates (X_B, Y_B, Z_B) of points on the base shoe last (2) of basic footwear size using gauges (15) associated with a first computer means (10) on which CAD programs are run; - obtaining, from the spatial coordinates (X_B, Y_B, Z_B) of points on the base shoe last (2) of basic footwear size, spatial coordinates (X_n, Y_n, Z_n) of points on at least another shoe last in the series, by using predetermined calculation formulae entered to said computer means, the so-called grading step; - feeding an NC tool machine with said spatial coordinates (X_n, Y_n, Z_n) of points on at least another shoe last in the series for the manufacturing thereof; - using the information contained in the memory, physically installed in each shoe last or accessible by means of its code, to design the footwear component parts and properly assembling them at the production stage.

WO 03/088778 A3